

REMARKS

Claims 1-27 are pending in this application. By this Amendment, claims 1-3, 12-15, 23 and 25-27, and the specification, are amended. The amendments introduce no new matter. The amendments are (1) generally administrative, (2) made in response to a §112 rejection asserted in the Office Action, or (3) better clarify the subject matter recited in the claims. Reconsideration of the application based on the above amendments and the following remarks is respectfully requested.

Applicant appreciates the courtesies shown to Applicant's representative by Examiner Ware in the July 19, 2005 personal interview. Applicant's separate record of the substance of the interview is incorporated into the following remarks. Specifically, claims 1, 13, 14 and 27 are amended to comply with the Examiner's helpful suggestions made during the interview.

The Office Action, in paragraph 2, objects to the drawings as failing to comply with 37 C.F.R. §1.84(p)(4). The specification is amended to obviate the objection. Withdrawal of the objection to the drawings is respectfully requested.

The Office Action, in paragraph 3, objects to claims 4, 7 and 26 because of informalities. Claims 4, 7 and 26 are amended to obviate the objections. Withdrawal of the objections to claims 4, 7 and 26 are respectfully requested.

The Office Action, in paragraph 4, rejects claims 1-9 and 13-27 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Claims 1, 13, 14, 26 and 27 are amended to better clarify the subject matter recited in those claims. Further, Applicant respectfully submits that, while Figs. 3-5 show input signals passing through attenuation devices, the disclosure at least at paragraph [0025] notes, with reference to Fig. 5 that "[w]hen not enabled, the attenuation value generators 418-422 output attenuation values equivalent to no attenuation to all of the attenuators 320-324. For example, the attenuation value generators may output 1s for attenuation values when no attenuation is desired and a

fraction when attenuation is desired." As such, although receiving signals from the attenuation value generators, the attenuators would have no function in attenuating the input signal in some cases but would instead pass the input signal through as an "other non-attenuated one of the input signals," as are recited in the enumerated independent claims.

Applicant's representative presented the above arguments to the Examiner during the July 19 personal interview. The Examiner indicated that there may be a requirement for some other way to differentiate signals coming out of the attenuation value generators. Applicant's representative asserted that the figures, with the accompanying explanation, adequately portray all of the features recited in the claims. The Examiner indicated that she would further consider Applicant's arguments on submission of a formal reply.

Accordingly, reconsideration and withdrawal of the rejection of claims 1-9 and 13-27 under 35 U.S.C. §112, first paragraph, are respectfully requested.

The Office Action, in paragraph 8, states that claims 5, 7, 8, 16, 18 and 20-21 contain allowable subject matter. Specifically, the Office Action states that the enumerated claims would be allowable if rewritten in independent form including all of the features of the base claims and any intervening claims. Applicant appreciates this indication of allowability, but respectfully submits that at least independent claims 1 and 14, from which the enumerated claims directly or indirectly depend, are allowable for at least the reasons set forth below.

The Office Action, in paragraph 6, rejects claims 1, 2, 6, 9-15, 19 and 22-27 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,335,951 to Cangiani et al. (hereinafter "Cangiani"). This rejection is respectfully traversed.

Cangiani discloses a method for generating a global positioning signal from a space-based craft including multiple steps which ultimately result in combining at least one in-phase modulated signal component and at least one quadrature modulated signal component to generate the global positioning signal (Abstract). Applicant respectfully submits that the

method disclosed in Cangiani teaches away from conventional "waveform generator architectures" such as those to which the subject matter recited in the pending claims is directed. Specifically, Cangiani states that although such conventional waveform generator architectures can generally be used for communications systems, such an approach is not suitable for broadcast of the GPS navigation signals from space to which the Cangiani device is directed, the disclosure of Cangiani going on to recite the limitations that lead to this conclusion (col. 1, line 57 - col. 2, line 8).

Additionally, Applicant's representative noted during the personal interview that Cangiani does not disclose generating a combined signal in a communications system that is a combination of a plurality of input signals and is separate and distinct from the constant envelope combined signal that is ultimately output from the claimed device. The Examiner was unable to show where such a feature was depicted in the reference. The Examiner indicated that she would have to further consider this argument upon submission of Applicant's formal response.

Applicant's representative discussed the applicability of Cangiani as a reference to reject the subject matter of the enumerated claims, because Cangiani is specifically directed to systems and methods for modifying signals in other than communications systems. The Examiner indicated that the claims recite only a method for generating a constant envelope combined signal, and are therefore not limited to communications systems. As such, the Examiner asserted that she could broadly read Cangiani as disclosing the recited method.

Claim 1, and in like manner claims 13, 14 and 27 are amended to positively recite a method and/or device for generating a constant envelope combined signal in a communications system, comprising, among other features, a step of, or means for generating a combined signal in a communications system that is a combination of a plurality of input signals.

Further, Cangiani teaches, in its method for generating a global positioning signal from a space-based craft, a phase (not amplitude) modulated signal resulting in maintaining the amplitude of the composite signal constant (col. 3, lines 19-34 and col. 2, lines 30-52). Each of a plurality of binary input signals is fed to a binary phase-shift keying modulator which modulates phase components of the input binary signals, outputs of the binary phase-shift keying modulator being scaled, using variable attenuators, to achieve desired relative power ratios between the various signal components (col. 4, lines 41-52). This phase modulation of the input signals cannot reasonably be read to suggest attenuating amplitude of selected ones of the input signals to generate attenuated input signals and combining the attenuated input signals with other non-attenuated of the input signals to generate a constant envelope combined signal, as is varyingly recited in at least independent claims 1, 13, 14, 26 and 27.

Applicant's representative presented the above argument to the Examiner during the July 19 personal interview. The Examiner indicated that her reference of Fig. 3 may have been incomplete in describing for the Applicant the basis of the rejection of the enumerated claims over Cangiani. Specifically, the Examiner pointed out that Fig. 9 of Cangiani may disclose an amplitude modulation component for attenuated (element 106) and non-attenuated (element 108) input signals prior to being combined (see the box with the plus sign) in the Cangiani system. Applicant's representative pointed out that it is improper to combine elements disclosed as "Prior Art" in the Cangiani reference, which the Cangiani device seeks to correct enumerated shortfalls in, with other parts of the Cangiani disclosure, absent proof of some motivation for the combination. In other words, any attempt to combine, for example, the embodiments of Fig. 3 and Fig. 9 of Cangiani to show a combination of features such as are recited in, for example, independent claim 1, is improper, absent proof of motivation. Also, because the disclosure of Cangiani indicates that the device taught by Figs.

8 and 9 is intended to overcome shortfalls in the prior art device disclosed in at least Fig. 3, one of ordinary skill in the art would have viewed the disclosure of Cangiani as specifically teaching away from a combination of the embodiments in Fig. 3 and Fig. 9.

Additionally, to the extent that Fig. 9 may be relied upon alone for its disclosure of phase modulated signals being variably attenuated to a desired level prior to mixing to form a final signal to be transmitted using a variable attenuator (see, e.g., col. 5, lines 13-16), this disclosure cannot reasonably be considered to suggest the feature of attenuating amplitudes of selected ones of the input signals to generate attenuated input signals in combination with the other features recited in independent claims 1, 13, 14 and 27.

For at least these reasons, Cangiani cannot reasonably be considered to have suggested the combinations of all of the features recited in at least independent claims 1, 13 and 27. Further, claims 2, 6, 9, 10, 14, 15, 19 and 22-26 are also not suggested by Cangiani for at least the respective dependence of these claims directly or indirectly on independent claims 1 and 13, as well as for the separately patentable subject matter which each of these claims recites.

Accordingly, reconsideration and withdrawal of the rejections of claims 1, 2, 6, 9, 10-15, 19 and 22-27 under 35 U.S.C. §103(a) as being unpatentable over Cangiani are respectfully requested.

The Office Action, in paragraph 7, rejects claims 4, 14, 15, 17 and 24-26 under 35 U.S.C. §103(a) as being unpatentable over Cangiani as applied to claims 1 and 2, in view of U.S. Patent No. 6,445,749 to Feher. This rejection is respectfully traversed.

At the outset, Applicant notes that the Office Action, in paragraph 7, mentions an invention to Masheff et al. which the Office Action asserts it would have been obvious to modify in combination with Cangiani in view of Feher. There is no other reference to any invention of Masheff et al. anywhere in the prosecution history regarding this application. Applicant's representative presented this concern to Examiner Ware during the July 19

personal interview. The Examiner indicated that the inclusion of any reference to Masheff et al. was in error. As such, Applicant discounts any reference to Masheff et al. and traverses the prior art rejection of the Office Action as stated in the previous paragraph.

Feher discloses a complex methodology for gaining power advantage and improved efficiency in signal processors, modulators/demodulators (modems), transmitters/receivers (transceivers), and particularly in cross-coupled signal processors to provide power efficient partly-linearized and non-linearly amplified systems in radio, infrared, cable, fiber optic and practically all communication transmission systems. (Abstract and col. 1, lines 15-30). Specifically, an improved form of phase shift keying is disclosed in which an input binary data stream is split into I and Q channels by splitter prior to being fed to baseband processing circuitry (col. 6, lines 1-4).

Applicant respectfully submits that Feher, which is drawn to conventional communications systems as listed above, is not combinable with Cangiani for at least the reasons set forth in Cangiani, as argued above. Further, to the extent that Feher may be deemed as combinable with Cangiani, the improved form of phase-shift keying disclosed in Feher does not overcome the shortfall in the application of Cangiani to at least the subject matter recited in independent claims 1, 13, 14 and 27.

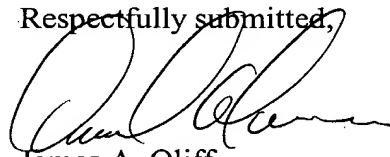
For at least these reasons, the combination of Cangiani and Feher cannot reasonably be considered to suggest all of the features recited in claims 4, 14, 15, 17 and 24-26, at least for the respective dependence of these claims, directly or indirectly, on independent claims 1 and 14, as well as for the separately patentable subject matter that each of these claims recites.

Accordingly, reconsideration and withdrawal of the rejection of claims 4, 14, 15, 17 and 24-26 under 35 U.S.C. §103(a) as being unpatentable over the combination of Cangiani and Feher are respectfully requested.

In view of the foregoing, Applicant respectfully submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 2, 4, 6, 9-15, 17, 19 and 22-27, in addition to the indicated allowable subject matter of claims 3, 5, 7, 8, 16, 18, 20 and 21, are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number set forth below.

Respectfully submitted,



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